Joint Information Operations Range Overview

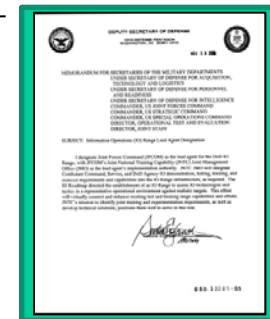| Overall classification of this brief is |
|---|
| **UNCLASSIFIED** |

Joint IO Range Background

"DoD requires an integrated test range to increase confidence and better assure predictable outcomes. The test range should support exercises, testing and development of Computer Network attack (CNA), EW and other IO capabilities."

FY11

64 nodes; 45 events

CENTCOM

STRATCOM

AFRICOM

EUCOM

United Kingdom

FY10

57 nodes; 33 events

NAVY

ARMY

USMC

FY09

40 nodes; 18 events

PACOM

AIR FORCE

NSA

Australia

FY08

11 events; PL-3 Designation

FY07

IOC: 10 nodes; 3 use cases

FY06

FY05

DepSecDef England designates JFCOM as LA

2003 DoD IO Roadmap

Recommendation: Develop a network of IO & CNA ranges

USD(I)
USD(AT&L)
DOT&E

68 nodes;
53 events
-Transitioned to JS/J7/JCW
 • aligned under S&I / JOSE

Joint IO Range Purpose & Tasks

The Joint IO Range is a secure cyber enterprise providing warfighters, and supporting elements, the ability to employ highly classified information related capabilities

Tasks:

❖ **Provide a flexible and persistent operationally relevant and technically representative environment that enables the integrated employment of information-related capabilities (i.e. cyber, electronic warfare, intelligence…)**

❖ **Connect and enhance existing test and training range capabilities**

❖ **Integrate COCOM, Service, Agency & Coalition requirements; from concept development and tests through exercises, training and mission rehearsal**

❖ **Assess IO technologies and tactics in a representative operational environment against realistic targets**

❖ **Identify future joint requirements, as well as develop solutions**

Key Joint IO Range Concepts

Standing Infrastructure

Supports events at multiple independent levels of security

Joint IO Range

TOP SECRET CAPABILITY — **USER**

GENSER VISUALIZATION — **USER**

UNCLAS TARGET ENVIRONMENT — **USER**

Closed Loop Network

Type 3 encrypted VPNs created within Type 1 encrypted cloud

LCD Display

Site Patch Panel — **Port**

IOR Patch Panel — **Port**

Site Target

IO Range C2

Integrated Services Router

48-port Ether switch Module
- 10/100 Ethernet Port
- 10/100 Ethernet Port
- 10/100 Ethernet Port

Encryption Module
- Type-3 Encrypted VPN **IOR Visualization**
- Type-3 Encrypted VPN **IOR Target**
- Type-3 Encrypted VPN **IOR C2 Voice Net**

Type1 Encrypted VPN
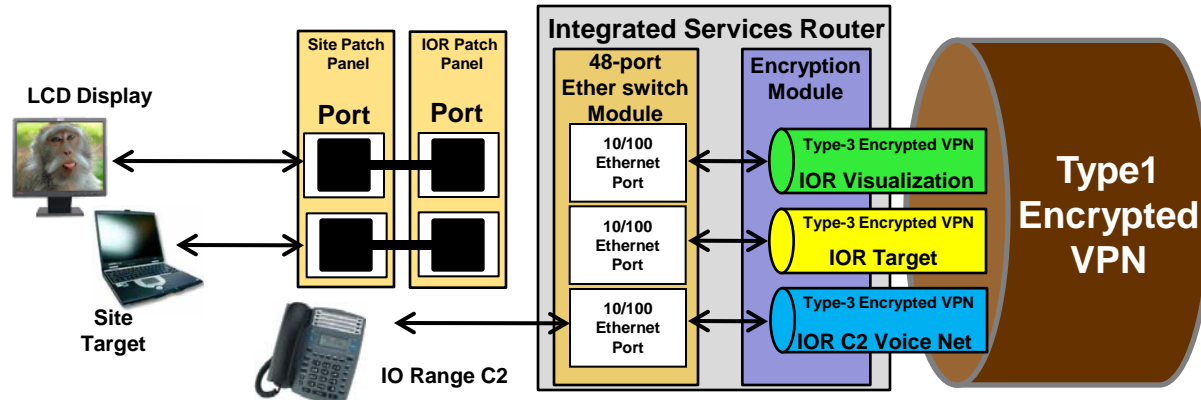
Streamlined Approval Process

- **Standing Exercise EXORD**

- **ATO certified by DIA and Joint Staff SAPCO**

"USE OF THE IO RANGE SATISFIES ALL REQUIREMENTS FOR A CLOSED-LOOP NETWORK"
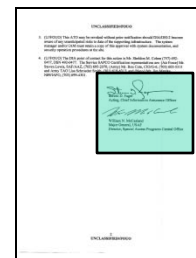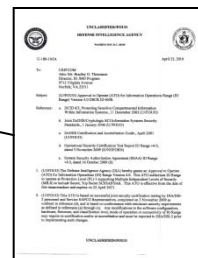
Steven D. Fager
Acting, Chief Information Assurance Officer

William N. McCasland
Major General, USAF
Director, Special Access Programs Central Office

What the Joint IO Range Provides

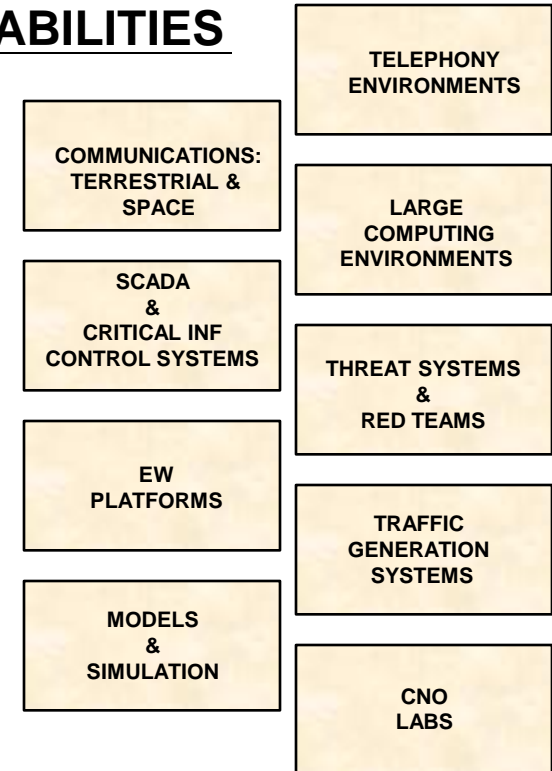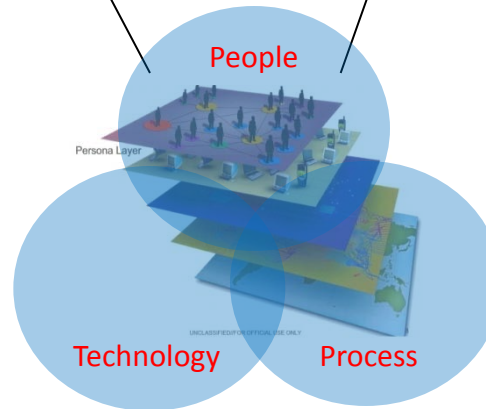| The **ONLY** fully accredited, deployable **SAP/SAR+** distributed information system **within DoD**	Persistent technically representative environment with standing execution authority and mature processes	Subject matter expertise for weapon-target pairing, environment characterization, engineering, planning and synchronization
Technology	**Process**	**People**

USERS

- AFRICOM
- CENTCOM
- EUCOM
- PACOM
- SOUTHCOM
- STRATCOM
- ARMY
- NAVY
- AIR FORCE
- USMC
- NSA
- DIA
- DOE
- DOT&E
- Australia
- United Kingdom

People

Technology   Process

CAPABILITIES

- COMMUNICATIONS: TERRESTRIAL & SPACE
- SCADA & CRITICAL INF CONTROL SYSTEMS
- EW PLATFORMS
- MODELS & SIMULATION
- TELEPHONY ENVIRONMENTS
- LARGE COMPUTING ENVIRONMENTS
- THREAT SYSTEMS & RED TEAMS
- TRAFFIC GENERATION SYSTEMS
- CNO LABS

Joint IO Range Enterprise

Ramstein
Grafenwohr
RAF Waddington, UK
Kelley Barracks
Patch Barracks

PNNL
INL
Offutt AFB
Rome, NY
MIT / LL
Lakehurst, NJ
WPAFB
Ft Monmouth
Peterson AFB
Schriever AFB
Crane, IN
Aberdeen, MD
Ft Meade (X10)
Alexandria, VA
Ft Belvoir
Quantico, VA
PAX River, NAS
China Lake
Langley AFB
JWAC
Nellis AFB
Norfolk, VA
Virginia Beach
Suffolk, VA
Pt Mugu
29 Palms
USNS Prevail
Anaheim
Kirtland AFB
Redstone
Ft Gordon
San Diego
Playas, NM
Ft Hood
Yuma, AZ
Lackland AFB
Hurlbert AFB
Eglin AFB

Pearl City
Pearl Harbor
Ford Island
Kunia
Tampa, FL

Yonsan
Delamere, AUS
Osan AB

Canberra, AUS

Service Delivery Points

Installed	★ (green)
In Progress	★ (yellow)
Planned	★ (blue)
Recurrent	★ (purple)

68 sites as of August 2011

UNCLASSIFIED

JIOR Nodes

TSDP
(Transportable)

DIA CTTA approveds for stacked configuration (eliminating need for 1m Red/Black separation)
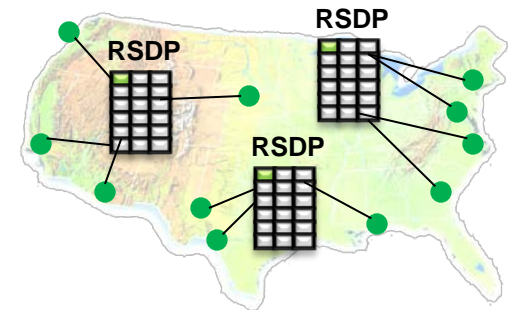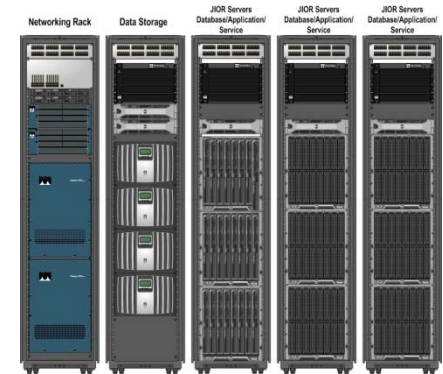
MSDP
(Micro)

First generation MSDP's include:
• Small form-factor PC
• Cisco 7960G VoIP phone
• Axis 214 PTZ IP camera

RSDP
(Regional)

JIOR Node Concentrator

Delivering a closed-loop Community Cloud Computing (C4) solution providing cost savings, power savings, green savings and increased agility in S/W deployment

Summary

The Joint IO Range:

- Increases COCOM awareness and confidence in IO capabilities

- Increases integration of non-kinetic effects with kinetic warfare

- Supports emerging IO technologies

- Facilitates training against IO targets sets

- Integrates IO capabilities into Joint training, testing, and experimentation

"**We cannot conduct an effective cyber experimentation compaign without the IO Range.**"
- USPACOM - Terminal Fury 10 Cyber War AAR (2010)

"**We saved $4M by using the IO Range instead of procuring the equipment ourselves.**"
- Division Head for EW Programs, Naval Surface Warfare Center Crane(NSWC Crane)

"**315 Network Warfare Squadron (39 NWS) personnel who've completed UNWT prior to assignment are scoring 15-20% higher on their entrance exam.**"
- From the 39 IOS UNWT Course Director (2009)

"**The IO Range provided a realistic opportunity to conduct live fire CNO via a protected network.**"
- Talisman Sabre 07 AAR - CTF C39 and C6

"**The IO Range is absolutely vital towards certifying CNO crew members and for testing/validating new CNO tactics and tools.**"
- 315 Network Warfare Squadron TTP PE (2008-2010 AAR)